

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
5 February 2004 (05.02.2004)

PCT

(10) International Publication Number
WO 2004/011766 A1

(51) International Patent Classification⁷: **E21B 21/00**,
43/00

(72) Inventors; and
(75) Inventors/Applicants (for US only): **HEAD, Philip** [GB/GB]; **The Glade, Springwoods, Virginia Water, Surrey GU25 4PW** (GB). **LURIE, Paul, George** [GB/GB]; **The Jays, Longhurst Road, East Horsley, Surrey KT24 6AF** (GB).

(21) International Application Number:
PCT/GB2003/003090

(22) International Filing Date: **16 July 2003 (16.07.2003)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
0217288.0 25 July 2002 (25.07.2002) GB
0305811.2 13 March 2003 (13.03.2003) GB

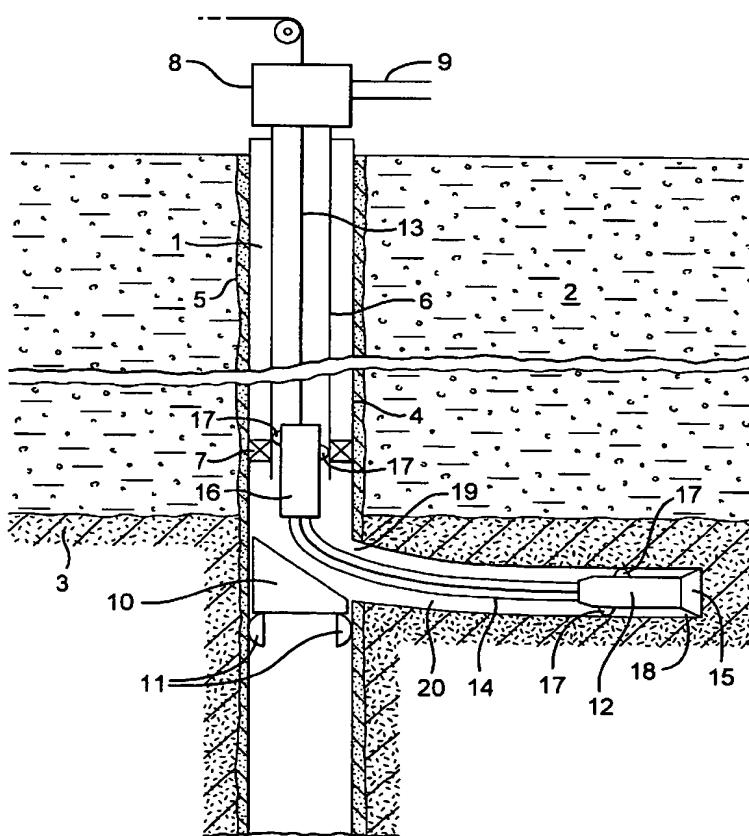
(71) Applicants (for all designated States except US): **BP EXPLORATION OPERATING COMPANY LIMITED** [GB/GB]; **Britannic House, 1 Finsbury Circus, London EC2M 7BA** (GB). **XL TECHNOLOGY LIMITED** [GB/GB]; **Gibb House, Kennel Ride, Ascot, Berkshire SL5 7NT** (GB).

(74) Agent: **COLLINS, Frances, Mary**; **BP International Limited, Patents & Agreements, Chertsey Road, Sunbury on Thames, Middlesex TW16 7LN** (GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: DRILLING METHOD



(57) **Abstract:** A method of drilling a borehole from a selected location in an existing wellbore (1) penetrating subterranean earth formation having at least one hydrocarbon bearing zone (3) wherein the existing wellbore is provided with a casing (4) and a hydrocarbon fluid production conduit (6) is arranged in the existing wellbore in sealing relationship with the wall of the casing, the method comprising: passing a remotely controlled electrically operated drilling device (12) from the surface through the hydrocarbon fluid production conduit to the selected location in the existing wellbore; operating the drilling device such that cutting surfaces on the drilling device drill the borehole from the selected location in the existing wellbore thereby generating drill cuttings wherein during operation of the drilling device, a first stream of produced fluid flows directly to the surface through the hydrocarbon fluid production conduit and a second stream of produced fluid is pumped over the cutting surfaces of the drilling device via a remotely controlled electrically operated downhole pumping means and the drill cuttings are transported away from the drilling device entrained in the second stream of produced fluid.